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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/804,232

03/19/2004

Ovidiu Marin

Scie 6490

6075

7590

09/25/2006

LINDA K. RUSSELL  
AIR LIQUIDE  
SUITE 1800  
2700 POST OAK BLVD  
HOUSTON, TX 77070

EXAMINER

DUONG, THO V

ART UNIT

PAPER NUMBER

3753

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/804,232

Applicant(s)

MARIN ET AL.

Examiner

Tho v. Duong

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 3-8, 12, 15, 18-22 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2, 9-11, 13-14, 16-17, 23-25 and 27-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/19/04; 7/30/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

Claims 3-8,15,18-21 and 22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election of species of figure 5 was made **without** traverse in the reply filed on 8/30/06. Moreover, the examiner withdraws claims 12 and 26 from further consideration since the claimed subject matter of claims 12 and 26 direct to the non-elected species 1-4 and not the elected species 5.

### *Information Disclosure Statement*

The information disclosure statement filed 7/30/2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. Particularly, the International Search Report for PCT/IB2004/000870, has not been submitted.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,13,16,17,27 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Linden et al. (US 4,966,615). Linden discloses (figure 2) a heat exchanger system and a method for cooling an optical fiber comprising an outer tube section (15); an inner tube section (9) disposed within and separated a selected distance from the outer tube to form an annular gap (16) there between, wherein the inner tube section includes an internal passage (10) configured to receive and cool the fiber as the fiber moves through the heat exchanger; and a plurality of fins (19) extending transversely from internal peripheral wall portions of the inner tube section toward a central axis of the inner tube section, wherein the fins (19) facilitate heat transfer between a cooling medium (water) flowing through the annular gap and helium flowing within the inner tube section during system operation.

Claims 1,2,13,14,16,17,27 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Shiono Mitsuhiro (JP 11060287). Shiono discloses (figures 1-3) a heat exchanger system and a method for cooling an optical fiber comprising an outer tube section (4); an inner tube section (5) disposed within and separated a selected distance from the outer tube to form an annular gap (9) there between, wherein the inner tube section includes an internal passage (10) configured to receive and cool the fiber as the fiber moves through the heat exchanger; and a plurality of fins formed by a spiraling element (8) extending transversely from internal peripheral wall portions of the inner tube section toward a central axis of the inner tube section, wherein the fins facilitate heat transfer between a cooling medium (water) flowing through the annular gap and helium flowing within the inner tube section during system operation.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-11 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linden in view of Koaizawa et al. (US 5,897,682). Linden substantially discloses all of applicant's claimed invention as discussed above except the limitation that a recycle line connects the coolant fluid outlet to the coolant inlet and a fan or pump disposed within the recycle line between the inlet and the outlet. Koaizawa discloses (figure 1) a heat exchanger for cooling an optical fiber that has a recycle line (10) equipped with a pump (22) connecting between a fluid coolant inlet (4b) and a fluid coolant outlet (4a) for a purpose of purifying and re-using the fluid coolant of the heat exchanger. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Koaizawa's teaching in Linden's heat exchanger for a purpose of purifying and re-use the fluid of the heat exchanger.

Claims 9-11 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiono in view of Koaizawa et al. (US 5,897,682). Shiono substantially discloses all of applicant's claimed invention as discussed above except the limitation that a recycle line connects the coolant fluid outlet to the coolant inlet and a fan or pump disposed within the recycle line between the inlet and the outlet. Koaizawa discloses (figure 1) a heat exchanger for cooling an optical fiber that has a recycle line (10) equipped with a pump (22) connecting between a fluid coolant inlet (4b) and a fluid coolant outlet (4a) for a purpose of purifying and

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re-using the fluid coolant of the heat exchanger. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Koaizawa's teaching in Shiono's heat exchanger for a purpose of purifying and re-use the fluid of the heat exchanger.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Miller (US 4,437,870) discloses an optical fiber cooler.

Darcangelo et al. (US 4,514,205) discloses a fiber cooling apparatus.

Takimoto (US 4,894,078) discloses a method and apparatus for producing optical fiber.

Davis (US 4,664,689) discloses a method and apparatus for rapidly cooling optical fiber.

Briere (US 4,400,190) discloses a optical fiber cooling apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v. Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F (first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keasel Eric can be reached on 571-272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TD

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September 7, 2006



Tho v Duong  
Primary Examiner  
Art Unit 3753